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ABSTRACT

It was the purpose of this investigation to examine intellectual commitment as an outcome of commonly occurring interests and circumstances, and to attempt to understand some of the circumstances and conditions influencing the development of intellectual commitment. For the purposes of this study, intellectual commitment is defined as an intense and persevering involvement with intellectualism that is manifested by actively pursuing intellectual activities. The investigation focused on the university and the university student, since the university offers a multitude of opportunities for fostering intellectual commitment and the university student is probably developmentally ready to devote himself to something such as intellectualism. The first major hypothesis was strongly supported. That is, pre-university behavior or behavior in high school is a definite determinant of an individual's intellectual commitment. The second hypothesis was also strongly supported. That is, in addition to pre-university behavior, the university environment, through the influence of the individual's associates, is a determinant of the individual's intellectual commitment. (Author/HS)

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The Development of Intellectual Commitment in University Students

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AERA Paper

There are many possible outcomes of a formal educational experience, be it on the elementary, secondary, or university level. These outcomes include the traditional cognitive outcomes, such as the ability to recognize interrelationships among concepts, and certain "nontraditional" affective outcomes, such as the development of a deep involvement with intellectualism, which might be termed intellectual commitment. Krathwohl, Bloom, and Masia (1964) have outlined a taxonomy of affective educational objectives in which commitment is more or less a midpoint between showing some interest and developing a total philosophy of life. However, the objectives of Krathwohl et al. are identified with specific academic subject areas and commitment is described as a desired educational outcome that is to be included in a course's curriculum. It should be recognized that intellectual commitment need not develop out of experiences in a particular course, but rather (and more likely) develop from interaction with the total environment.

It was the purpose of this investigation to examine intellectual commitment as an outcome of commonly occurring interests and circumstances, and to attempt to understand some of the circumstances and conditions influencing the development

of intellectual commitment. Toward this end, a model for the development of intellectual commitment was proposed and tested. The investigation focused on the university and the university student, as the university offers a multitude of opportunities for fostering intellectual commitment, and the university student is probably developmentally ready to devote himself to something such as intellectualism. For the purposes of this investigation, intellectual commitment is defined as an intense and persevering involvement with intellectualism that is manifested by actively pursuing intellectual activities.

Model of Intellectual Commitment Development

To explain the development of intellectual commitment, an input-output model with two major sources of input and the one output of concern, intellectual commitment, was proposed. The first source of input is the set of the individual's characteristics. This "Pre-University Input" represents the personal characteristics and experiences the individual brings to the university. It includes the individual's intellectual behavior as a high school student, the intellectual behavior he expects to evince as a university student, and certain of his personality characteristics (needs for achievement, understanding of knowledge, endurance, autonomy, play, affiliation, and social recognition). The second source of input, "University Input," represents the influence of the university environment, specifically, the in-

fluence of the individual's university associates. Associate influence is defined as the influence of peers and of authority figure adults. These two types of individuals were thought to represent the two major types of alliances, peer and authority figure, the student forms during his university career.

The actual process of the development of intellectual commitment was theorized to be the superposition of these two sources of input within the individual. The degree of intellectual commitment, the output, that the individual develops as a result of this interaction can be schematically represented as follows:

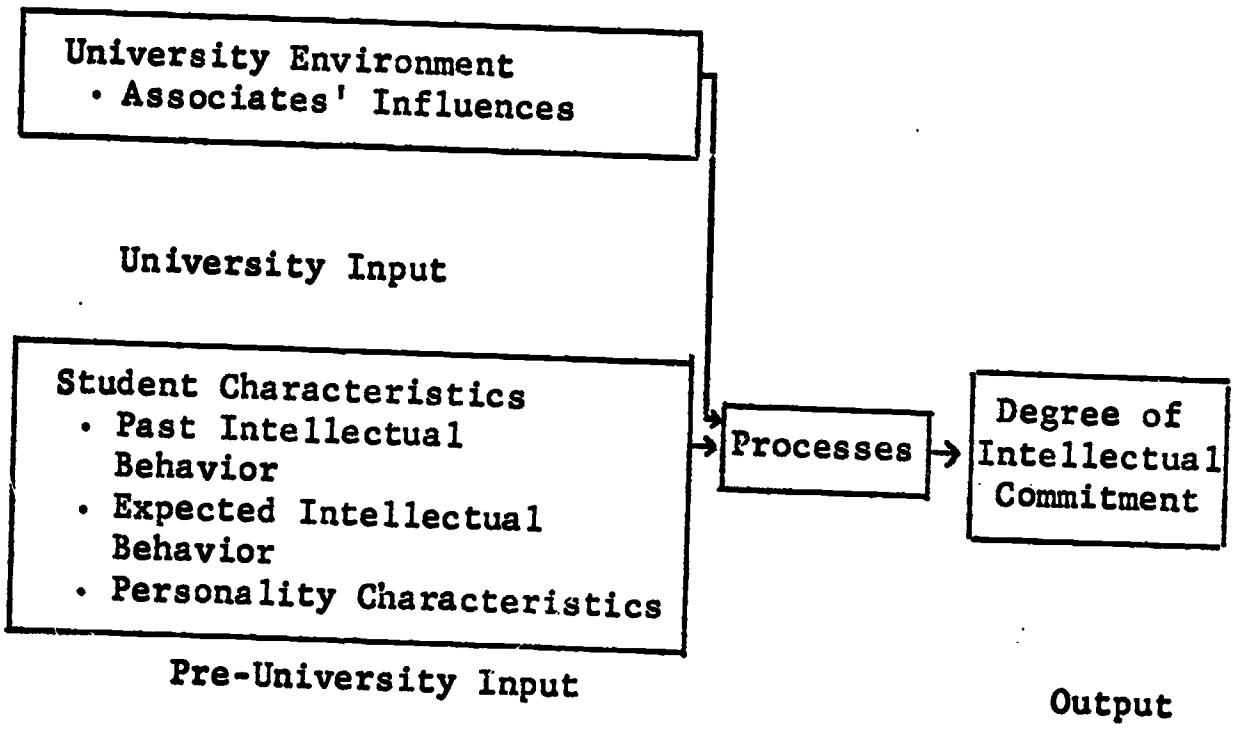

Figure 1. Model of Intellectual Commitment Development

The two major hypotheses investigated were:

A. Pre-university behavior is a determinant of an individual's intellectual commitment.

B. In addition to pre-university behavior, the university environment, through the influence of the individual's associates, is a determinant of the individual's intellectual commitment.

Method

Subjects

One hundred first semester freshmen students at a large eastern university were the subjects of the investigation. There were 91 females and 22 males in the sample. All students were white and between the ages of 16 and 19. The sample was restricted to students who graduated from high school the previous June, and who were Canadian or United States citizens and resident students at the university. The purpose of these restrictions was to eliminate the influence of intervening work or armed service experience between high school and university, cultures different from that of the North American continent, and student-commuter environments. All students who participated in the investigation were volunteers.

Instrumentation

To measure intellectual commitment, past and expected intellectual behavior and associates' influences, several instru-

ments were developed.

The measurement of intellectual commitment focused on two overt manifestations of the construct: the individual's activities, and the individual's intellectual preferences. In the first measure of intellectual commitment, Intellectual Commitment: Activities, the student is asked to describe the nature of and the amount of time he devotes to various intellectual activities. In the second measure of intellectual commitment, Intellectual Commitment: Preferences, the student indicates his willingness to choose intellectual over non-intellectual alternatives in hypothetical situations which offer several courses of action. The activities commitment measure has 40 intellectual activity items and the preferences commitment measure has 11 preference items. To decrease the probability that the student with few intellectual activities will feel inadequate and be tempted to present a more socially desirable image, 15 items relating to amount of participation in non-intellectual activities are interspersed among the items of the activities commitment measure and are not included in the item count, scoring of the measure, or reliability computations. The reliabilities, computed using the alpha coefficient, were .85 for the Intellectual Commitment: Activities measure and .57 for the Intellectual Commitment: Preferences measure.

Similar to the activities commitment measure, the measurement of past and of expected intellectual involvement focuses

on, respectively, the individual's past intellectual activities and his expected intellectual activities. The Past Intellectual Behavior instrument contains 32 items which refer to the student's prior voluntary participation in various intellectual organizations and activities and leisure-time reading habits. The Expected Intellectual Behavior measure is comprised of 18 items which concern the individual's plans to participate in voluntary, intellectually oriented activities. As with the activities commitment measure, non-intellectual items are interspersed among the items of the Past Intellectual Behavior and Expected Intellectual Behavior instrument. These items serve to reduce social desirability in responding and they are not included in the scoring, the item count, or the reliability computations. As computed using the alpha coefficient, the Past Intellectual Behavior instrument and the Expected Intellectual Behavior instruments have reliabilities of .71 and .81, respectively.

The Personality Research Form, Form A (Jackson, 1965), based upon Murray's theory of bipolar needs was used to assess the personality traits of needs for achievement, understanding of knowledge, endurance, play, affiliation, autonomy, and social recognition. In addition to these seven personality characteristics, there are eight other scales on the instrument. There is a total of 300 items on the instrument with 20 items per scale. The test has been normed on college students. Kuder-Richardson 20 reliability coefficients for the individual scales range from .62 to .80. Each of the scales has a standardized population mean of 50 and a standard

deviation of 10.

To assess the influence of an individual's university associates upon his intellectual commitment, the individual was asked to choose two persons, a peer and an authority figure adult, such as a professor, religious leader, or resident advisor, and respond to a series of questions about his association with each person. Each of these persons was to be someone whom he had met since the beginning of his freshman year. The authority figure adult is hereafter referred to as "significant other."

Three types of measures of associate influence were employed. The first type of associate influence measure, used to assess both peer and significant other influence, is based upon a set of questions which requires the student to describe the ways in which his peer or significant other have influenced his intellectual behavior. This is assumed to be a direct measure of associate influence. The Peer Direct Intellectual Influence measure contains 12 items related to how the individual's intellectual interests have changed since he met his peers. The individual indicates whether a series of his intellectual interests have increased or decreased because of his peer's influence, or whether his peer has caused no change in his level of interest in that area. The Significant Other Direct Intellectual Influence measure contains 14 items for which the individual describes how his interests have changed due to the influence of his significant other. The items are of the same type as the Peer Direct Intellectual Influence items.

The second type of measure, used only to assess peer influence,

is an indirect measure of intellectual influence. The corresponding instrument is the Peer Indirect Intellectual Influence instrument. This instrument is comprised of 20 items. For 15 of the items the student indicates the amount of time per week his peer devotes to various voluntary intellectual activities, and for five items the individual must surmise his peer's choice among intellectual and non-intellectual alternatives in hypothetical situations.

As with the other measures developed by the author, non-intellectual items were included in the aforementioned associate influence measures to reduce social desirability in responding. Again, these were "dummy" items not included in the item count, scoring, or reliability computations. Reliabilities, computed using the alpha coefficient, were .81 for the Peer Direct Intellectual Influence measure, .77 for the Peer Indirect Intellectual Influence measure, and .73 for the Significant Other Direct Intellectual Influence measure.

To control for possible differences in opportunity for interaction with associates, two additional measure of amount of interaction were developed. The Peer Interaction and the Significant Other Interaction measures consist of two and one questions, respectively, which assess the amount of interpersonal contact the individual has with his associates.

The above described measures of intellectual commitment, past and expected intellectual behavior, and associates' influences have been validated by a variety of methods and further

information is available from the author. For each of these instruments developed by the author each item was weighted by the inverse of the standard deviation for that item, and an individual's total score on a measure was the sum of each chosen item response multiplied by the weight for that particular item.

Measures of verbal ability, quantitative ability, and academic achievement were obtained from the Regents Scholarship Examination and the State University Admissions Examination. These two tests are considered equivalent and provide standard scores normed across the state. A second measure of achievement was a high school average index that had been standardized across all freshman applicants to the university.

Procedure

The Past Intellectual Behavior, Expected Intellectual Behavior, and Personality Research Form were administered during the first week of the fall semester. The intellectual commitment instruments and associate influence instruments were administered during the first week of December of the fall semester. Measures of ability and achievement were obtained from the student's records.

Analysis

A stepwise multivariate regression analysis procedure was used to assess the relation between the intellectual commitment demonstrated by university students and the degree to which this behavior was a product of their ability, past behavior, expected behavior, and associates' influences. The dependent variables were the two commitment measures and the independent variables

were the student characteristics and associates' influence measures. The ordering of the independent variables was based on the time at which the characteristics were acquired or the influences were experienced and on their assumed importance. Thus, the variables were entered into the regression equation in the following order:

Dependent Variables

Intellectual Commitment: Activities

Intellectual Commitment: Preferences

Independent Variables

Student Characteristics

Ability:	Verbal RSE or SUAE
	Quantitative RSE or SUAE
	Achievement RSE or SUAE
	High School Average
Intellectual Behavior:	Expected Intellectual Behavior
	Past Intellectual Behavior
Personality Characteristics:	Achievement
	Understanding of Knowledge
	Endurance
	Play
	Affiliation
	Autonomy
	Social Recognition

Associates' Influences

Degree of Interaction:	Peer Interaction
	Significant Other Interaction

Peer Influence:	Peer Indirect Intellectual Influence
	Peer Direct Intellectual Influence
Significant Other Influence:	Significant Other Intellectual Influence

The independent variables were entered into the regression equation individually and in subgroups. The purpose of grouping the measures was to examine the overall contribution of a related group of characteristics or influences to the development of intellectual commitment.

Results

The proposed model (see Figure 1) for the development of intellectual commitment is viable. That is, the correlates of intellectual commitment can be considered as a process with two major sources of input and the one output of concern. The findings show that the input variables of the intellectual commitment model account for 62.1 percent of the variation in the activities commitment measure and 37.7 percent of the variation in the preferences commitment measure.

Hypothesis A

The first major hypothesis tested was strongly supported. That is, "pre-university behavior" is a determinant of an individual's intellectual commitment. "Pre-university Input" accounts for 53.7 percent of the variation in the activities commitment measure and 31.4 percent of the variation in the

preferences commitment measure (see Table A, Appendix).

The multivariate test of association between the two commitment measures and the Past Intellectual Behavior and Expected Intellectual Behavior measures was statistically significant, above and beyond the student's ability and prior academic achievement, at = .05 (F = 17.25 with 4 and 110 degrees of freedom, see Table B, Appendix). Together the past and expected intellectual behavior measures accounted for 33.9 percent additional variation in the activities commitment measure and 12.8 percent additional variation in the preferences commitment measure. Thus, even after the maximum amount of variance has been accounted for by the student's ability and prior academic achievement, his past involvement with intellectual pursuits and his expected involvement with intellectual pursuits are very important to the degree of intellectual commitment he subsequently develops as a university student. The correlations between the measures of past and expected intellectual behavior are presented in Table C in the Appendix. These correlations show the strong relation between intellectual commitment and <u>both</u> past intellectual behavior and expected intellectual behavior.

The multivariate test of association between the two commitment measures and the seven personality measures was also statistically significant, above and beyond <u>all</u> student characteristics, at α = .05 (F = 2.05 with 14 and 196 degrees of freedom). All correlations between the commitment measures and the personality characteristics were in the hypothesized direction, and are pre-

sented in Table C. Need for understanding of knowledge showed the strongest relationship with intellectual commitment. This strong relationship was to be expected as to be highly intellectually committed entails, by definition, an intense involvement with intellectualism. Therefore, the person most likely to be so involved is one who has a high level of intellectual curiosity, wants to understand new areas of knowledge, and derives personal satisfaction from his intellectual involvement.

The assessments of verbal and quantitative abilities, academic achievement, and high school grades were included in the analysis primarily because they are "traditional" measures of student intellectual performance. It was not expected that any of these variables would be significantly related to intellectual commitment; however, it was important to verify this assumption and to account for the maximum amount of variance contributed by these "traditional" measures. Verbal ability was found to be important to intellectual commitment development and the test of association between the two commitment measures and the verbal ability measure was statistically significant at α =.05 ($F = 9.34$ with 2 and 110 degrees of freedom). The verbal ability measure accounted for 12.1 percent variance in the activities commitment measure and 6.9 percent variance in the preferences commitment measure. Verbal ability also showed moderate correlations with past intellectual behavior ($r = .35$), expected intellectual behavior ($4 = .26$), and need for understanding of knowledge ($r = .43$). It is, thus, likely that an individual's verbal ability pervades

much of his voluntary intellectual behavior. Quantitative ability and prior academic achievement were not found, as hypothesized, to be important to intellectual commitment development.

Hypothesis B

The second major hypothesis was also supported; that is, in addition to "pre-university behavior," the university environment, through the influence of the individual's associates, is a determinant of the individual's intellectual commitment. "University Input" accounts for an additional 8.4 percent ~~addition~~ variance in the activities commitment measure and 6.2 percent additional variance in the preferences commitment measure.

Considering first peer influence, the multivariate test of association between the two commitment measures and the Peer Indirect Intellectual Influence and the Peer Direct Intellectual Influence measures was statistically significant, over and beyond all student characteristics and amount of peer and significant other interaction, at $\alpha = .05$ ($F = 4.46$ with 4 and 188 degrees of freedom). The peer influence measures accounted for 7.1 percent additional variance in the ~~preferences~~ activities commitment measure. That is, even after the maximum amount of variance has been accounted for by the student's characteristics ("pre-university behavior") and amount of interaction with his peer and significant other, the intellectual involvement of his peer (as perceived by the student) is very important to the degree of intellectual commitment he develops as a university student.

The multivariate test of association between the two commit-

ment measures and the peer amount of interaction measure was not statistically significant at α = .05. Almost all the students indicated a high degree of interaction with their peers (89 percent met with their peers at least two to three times a week). Thus, the findings indicate that it is the nature of the relationship with the peer (as perceived by the individual), rather than the amount of contact, that is more important to the degree of intellectual commitment the individual develops.

The correlations between the commitment measures and the peer influence and interaction measures are presented in Table C. All correlations were in the hypothesized positive direction.

Finally, although the correlations were in the hypothesized positive direction, the multivariate test of association between the two commitment measures and the Significant Other Direct Intellectual Influence measure was not statistically significant, above and beyond all student characteristics, amount of peer and significant other interaction, and peer intellectual influence, at α = .05. The multivariate test of association between the two commitment measures and the significant other amount of interaction measure was statistically significant, over and above all student characteristics and amount of peer interaction, at α = .05 ($F = 3.88$ with 2 and 96 degrees of freedom). The amount of interaction measure accounted for less than one percent additional variance in the activities commitment measure and about five percent additional variance in the preferences commitment measure. However, the relationship between intellectual

commitment and significant other influence was not in the hypothesized positive direction.

There are several possible reasons why the students' intellectual commitment development was not influenced by their significant others. First, the majority of the students cited resident advisors or teaching assistants as significant others. Since these persons are generally very involved with their own lives at the university, it is likely that they do not exert a strong intellectual influence on the students.

Second, it may be that many of the relationships cited in this investigation represented the student's search for new and meaningful experiences and relationships. The students may have been "trying out" new and different associates and, therefore, the associations may have tended to be temporary and did not represent a sharing of values and attitudes.

While significant other influence can not be completely discounted, the results of the investigation indicate that peer influence is the more potent determinant of intellectual commitment and, consequently, significant other influence was removed from the commitment model.

Revised Model of Intellectual Commitment Development

Based upon the investigation results, the intellectual commitment model can be slightly revised to include verbal ability and to narrow associate influence to that of peer influence. The revised model for the development of intellectual commitment is schematically represented in Figure 2.

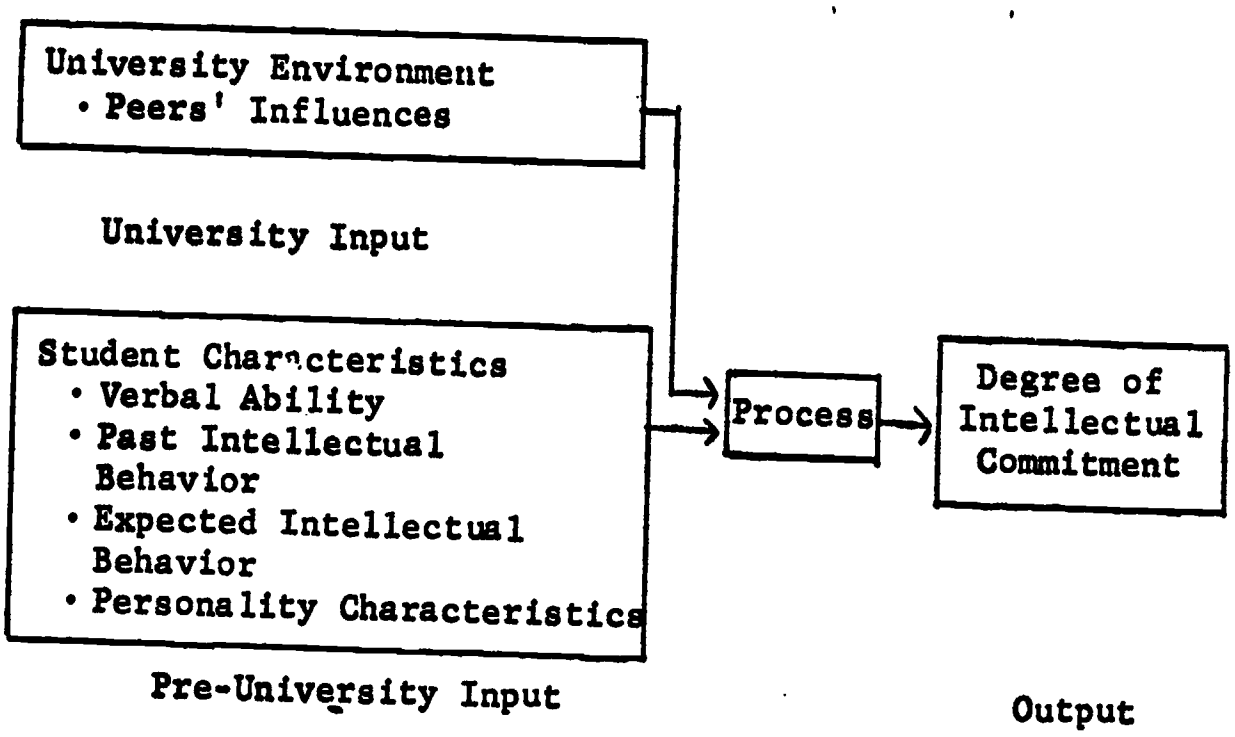

Figure 2. Revised Model of Intellectual Commitment Development

Discussion

The findings from this investigation are consistent with prior research showing that an individual tends to exhibit the same pattern of behavior as a university student that he exhibited as a high school student. Further, he expects to exhibit this behavior. The studies of extracurricular achievement have shown that extracurricular achievement in high school is the best indicator of extracurricular achievement in college, and educational and academic aspirations is the third best indicator (Holland and Nichols, 1964; Nichols, 1966). Similarly, in this investigation, an individual's involvement in intellectual activities in high school and his expected intellectual involvement were strongly related to the degree of intellectual commitment he manifested as a university student.

The strong relationship in university students between intellectual commitment and past intellectual involvement and between intellectual commitment and expected intellectual involvement suggests that intellectual commitment might be more easily fostered in young children who have not yet established regular patterns of non-intellectual behavior. By the time many individuals reach high school age they have been, through the influence of their home and community environment, so "turned-off" to intellectual pursuits that it is often difficult for the most dedicated teacher to spark some intellectual enthusiasm. It may be that individuals from intellectually impoverished environments can only become intellectually committed if certain influences are introduced into their environment before they reach a critical or threshold age. If intellectual commitment is to be considered a desirable personal characteristic, it would be advisable to examine the factors influencing intellectual commitment in persons of younger ages and of varying backgrounds.

The investigation findings concerning the importance of peer influence are consistent with prior research which has shown a positive relationship between an individual's intellectual behavior and the intellectual behavior of his peers. For example, Coleman (1961) with high school students and Boyer (1967) with university freshmen students, found positive correlations between an individual's academic performance and the value his peer group places on superior academic performance. This investigation extends these findings to an individual's non-required intellectual

performance.

Further, the stronger relationship between peer influence and intellectual commitment than between significant other influence and intellectual commitment is similar to Wilson's (1966) findings at Antioch college. Wilson found that seniors attributed more changes that had occurred within them during their four years at college to their peers than to their teachers. Also, Bushnell (1962) found in the Vassar studies that students tended to adopt the behavioral norms of their peer group and reject the norms of the faculty.

It is likely that the relationships with significant others cited in this investigation were so varied that significant other influence can only be considered if the relationships are in some way categorized by type (e.g., student-professor, student-religious leader, and student-resident advisor). For example, 40 percent of those students who cited as a significant other a teacher other than a teaching assistant scored above the mean on both the commitment measures and on the significant other intellectual influence measure. Thus, although many of the students may not have experienced strong intellectual influence from a significant other, some students apparently did have this experience. For this reason, significant other influence should not be totally disregarded as a determinant of intellectual commitment. Rather, future research should concentrate on examining different types of significant other relationships and the subsequent influence exerted on the individual through the relationship.

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APPENDIX

Table A

Results of the Regression Analysis: Percentage of Variation Accounted for by the Intellectual Commitment Model

Input (Independent) Variables	Percent of Variation Accounted for by Input Variables[a]	
	Intellectual Commitment: Activities	Intellectual Commitment: Preferences
Pre-university Input		
Verbal Ability	12.1	6.9
Quantitative Ability	.1	.6
Academic Achievement & High School Grades	.3	1.6
Expected Intellectual Behavior	24.6	11.1
Past Intellectual Behavior	9.3	1.7
Personality Characteristics	7.3	9.5
University Input		
Amount of Peer Interaction	.9	.4
Amount of Significant Other Interaction	.0+	5.1
Peer Influence	7.1	.1
Significant Other Influence	.4	.6
Total Variation Accounted for by Input Variables	62.1	37.7

[a]After the first imput variable, the percentages represent the additional amount for the variable named, in the order in which it is listed.

TABLE B

Results of Multivariate Step-wise Regression Analysis: Tests of Association[a]

Independent Variables	Tests of Association[b]					
	Dependent Variables Considered Separately				Dependent Variables Considered Together	
	Intellectual Commitment: Activities		Intellectual Commitment: Preferences		Intellectual Commitment: Activities & Preferences	
	F	D.F.	F	D.F.	F	D.F.
Verbal RSE-SUAE	15.27*	1,111	3.11	1,111	9.34*	2,110
Quantitative RSE-SUAE	.08	1,110	.69	1,110	.38	2,109
Achievement RSE-SUAE High School Average	.16	2,108	1.06	2,108	.61	4,214
Expected Intel Behavior Past Intel Behavior	33.40*	2,106	4.33*	2,106	17.25*	4,210
Need for Achievement Need for Understanding Need for Endurance Need for Autonomy Need for Play Need for Affiliation Need for Social Recognition	2.24*	7,99	1.91	7,99	2.07*	14,196
Peer Interaction	2.04	1,98	.53	1,98	1.28	2,97
Sig Other Interaction	.07	1,97	7.67*	1,97	3.88*	2,96
Peer Ind Intel Influence Peer Dir Intel Influence	8.92*	2,95	.06	2,95	4.46*	4,188
Sig Other Dir Intel Influence	.87	1,94	.88	1,94	.88	2,93

[a]See Table A for percentage of variation accounted for by independent variables.

[b]Tests of association significant at $\alpha = .05$ are marked with an aesterick (*).

TABLE C

INTERCORRELATIONS

		Intellectual History						Personality							Associates'		Influence		
		A	B	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
A	Intel Commit: Act	1	.33	.35	.16	.26	.09	.60	.58	.22	.61	.12	.31	-.17	-.04	-.10	.11	-.03	.56	.31	.23
B	Intel Commit: Pref	.33	1	.26	.07	.20	-.07	.40	.32	.34	.39	.21	.25	-.23	-.15	-.31	.08	-.18	.25	.13	.19
1	Verbal RSE-SUAE	.35	.26	1	.51	.72	.14	.26	.35	.05	.43	-.07	.31	-.09	-.34	-.27	-.13	-.15	.29	.30	.14
2	Quant RSE-SUAE	.16	.07	.51	1	.69	.13	.06	.25	.07	.18	.07	.09	-.03	-.04	-.12	-.11	-.14	.05	.09	.14
3	Ach RSE-SUAE	.26	.20	.72	.69	1	.14	.23	.24	.00	.31	.00	.19	-.09	-.25	-.33	-.14	-.15	.17	.10	.12
4	Hi Sch Ave	.09	-.07	.14	.13	.14	1	.06	.11	.03	.05	-.10	-.05	-.22	-.03	-.13	.00	.12	-.06	-.01	.07
5	Exptd Intel Behvr	.60	.40	.26	.06	.23	.06	1	.47	.26	.57	.23	.37	-.25	-.10	-.30	.17	.06	.34	.11	.21
6	Past Intel Behvr	.58	.32	.35	.25	.24	.11	.47	1	.21	.08	.13	.34	-.15	-.09	-.12	.09	-.01	.34	.27	.23
7	Need for Achieve	.22	.34	.05	.07	.00	.03	.26	.21	1	.28	.73	.15	-.47	-.09	-.19	-.01	.20	.20	.21	.24
8	Need for Underst	.61	.39	.43	.18	.31	.05	.57	.08	.28	1	.17	.46	-.15	-.04	-.34	-.09	-.01	.38	.25	.14
9	Need for Endurance	.12	.21	-.07	.07	.00	-.10	.23	.13	.73	.17	1	.16	-.29	-.05	-.27	.03	.17	.16	.19	.31
10	Need for Autonomy	.31	.25	.31	.09	.19	-.05	.37	.34	.15	.46	.16	1	-.18	-.38	-.44	.03	.11	.27	.16	.02
11	Need for Play	-.17	-.23	-.09	-.03	-.09	-.22	-.25	-.15	-.47	-.15	-.29	-.18	1	.26	.39	-.04	-.18	-.23	.04	.02
12	Need for Affil	-.04	-.16	-.34	-.04	-.25	-.03	-.10	-.09	-.09	-.04	-.05	-.38	.26	1	.43	.08	-.06	-.15	-.19	-.04
13	Need for Soc Recog	-.10	-.31	-.27	-.12	-.33	-.13	-.30	-.12	-.19	-.34	-.27	-.44	.39	.43	1	-.02	-.12	-.12	.03	.05
14	Peer Interaction	.11	.08	-.13	-.11	-.14	.00	.17	.09	-.01	-.09	.03	.03	-.04	.08	-.02	1	.04	.06	-.01	-.06
15	Sig Other Interac	-.03	-.18	-.15	-.14	-.15	.12	.06	-.01	.20	-.01	.17	.11	-.18	-.06	-.12	.04	1	.07	.03	-.11
16	Peer Ind Intel Infl	.56	.25	.29	.05	.17	-.06	.34	.34	.20	.38	.16	.27	-.23	-.15	-.12	.06	.07	1	.50	.10
17	Peer Dir Intel Infl	.31	.13	.30	.09	.10	-.01	.11	.27	.21	.25	.19	.16	.04	-.19	.03	-.01	.03	.50	1	.22
18	Sig O Dir Intel Inf	.23	.19	.14	.14	.12	.07	.21	.23	.24	.14	.31	.02	.02	-.04	.05	-.06	-.14	.10	.22	1